```
EEEEEEEEEE  XX      XX    AAAAAA    MM      MM  PPPPPPPP    LL          EEEEEEEEEE    SSSSSSSS
EEEEEEEEEE  XX      XX    AAAAAA    MM      MM  PPPPPPPP    LL          EEEEEEEEEE    SSSSSSSS
EEEEEEEEEE  XX      XX    AAAAAA    MM      MM  PPPPPPPP    LL          EEEEEEEEEE    SSSSSSSS
EE          XX      XX   AA    AA   MMMM  MMMM  PP      PP  LL          EE          SS
EE          XX      XX   AA    AA   MMMM  MMMM  PP      PP  LL          EE          SS
EE          XX      XX   AA    AA   MMMM  MMMM  PP      PP  LL          EE          SS
EE            XX  XX     AA    AA   MM  MM  MM  PP      PP  LL          EE          SS
EE            XX  XX     AA    AA   MM  MM  MM  PP      PP  LL          EE          SS
EE            XX  XX     AA    AA   MM  MM  MM  PP      PP  LL          EE          SS
EEEEEEEE        XX       AA    AA   MM      MM  PPPPPPPP    LL          EEEEEEEE      SSSSSS
EEEEEEEE        XX       AA    AA   MM      MM  PPPPPPPP    LL          EEEEEEEE      SSSSSS
EEEEEEEE        XX       AA    AA   MM      MM  PPPPPPPP    LL          EEEEEEEE      SSSSSS
EE            XX  XX     AAAAAAAAAA MM      MM  PP          LL          EE                  SS
EE            XX  XX     AAAAAAAAAA MM      MM  PP          LL          EE                  SS
EE            XX  XX     AAAAAAAAAA MM      MM  PP          LL          EE                  SS
EE          XX      XX   AA    AA   MM      MM  PP          LL          EE                  SS
EE          XX      XX   AA    AA   MM      MM  PP          LL          EE                  SS
EE          XX      XX   AA    AA   MM      MM  PP          LL          EE                  SS
EE          XX      XX   AA    AA   MM      MM  PP          LL          EE                  SS
EE          XX      XX   AA    AA   MM      MM  PP          LL          EE                  SS
EEEEEEEEEE  XX      XX   AA    AA   MM      MM  PP          LLLLLLLLLL  EEEEEEEEEE  SSSSSSSS
EEEEEEEEEE  XX      XX   AA    AA   MM      MM  PP          LLLLLLLLLL  EEEEEEEEEE  SSSSSSSS
EEEEEEEEEE  XX      XX   AA    AA   MM      MM  PP          LLLLLLLLLL  EEEEEEEEEE  SSSSSSSS
```

FILEID**LABIOSTAT

```
LL            AAAAAA    BBBBBBBB     IIIIII     000000     SSSSSSSS  TTTTTTTTTT    AAAAAA    TTTTTTTTTT
LL            AAAAAA    BBBBBBBB     IIIIII     000000     SSSSSSSS  TTTTTTTTTT    AAAAAA    TTTTTTTTTT
LL          AA      AA  BB      BB     II     00      00  SS            TT      AA      AA      TT
LL          AA      AA  BB      BB     II     00      00  SS            TT      AA      AA      TT
LL          AA      AA  BB      BB     II     00      00  SS            TT      AA      AA      TT
LL          AA      AA  BB      BB     II     00      00  SS            TT      AA      AA      TT
LL          AA      AA  BBBBBBBB       II     00      00    SSSSSS      TT      AA      AA      TT
LL          AA      AA  BBBBBBBB       II     00      00    SSSSSS      TT      AA      AA      TT
LL          AAAAAAAAAA  BB      BB     II     00      00          SS    TT      AAAAAAAAAA      TT
LL          AAAAAAAAAA  BB      BB     II     00      00          SS    TT      AAAAAAAAAA      TT
LL          AA      AA  BB      BB     II     00      00          SS    TT      AA      AA      TT
LL          AA      AA  BB      BB     II     00      00          SS    TT      AA      AA      TT
LLLLLLLLLL  AA      AA  BBBBBBBB     IIIIII     000000     SSSSSSSS    TT      AA      AA      TT
LLLLLLLLLL  AA      AA  BBBBBBBB     IIIIII     000000     SSSSSSSS    TT      AA      AA      TT

FFFFFFFFFF     000000     RRRRRRRR
FFFFFFFFFF     000000     RRRRRRRR
FF           00      00   RR      RR
FF           00      00   RR      RR
FF           00      00   RR      RR
FF           00      00   RR      RR
FFFFFFFF     00      00   RRRRRRRR
FFFFFFFF     00      00   RRRRRRRR
FF           00      00   RR   RR
FF           00      00   RR   RR
FF           00      00   RR     RR
FF           00      00   RR     RR
FF             000000     RR      RR
FF             000000     RR      RR
```

```
!File:  LABIOSTAT.FOR
!       Version 'V04-000'
```



```
!       Program LABIO_STATUS
! This is a utility routine for the LABIO  system. It displays
! the status of all 16 channels of the A/D. It assumes that
! the terminal is a VT52 or an equivalent, e.g VT100 in VT52 mode.
! The display is update once every 1-9 seconds. Default is
! one second. There are 5 commands associated with the program
!
!       C - display status of 16 channels
!       P - display status by process PID
!       H - display help frame (timeouts after 1 min.)
!       E - Exit to VMS DCL
!       Digit(1-9) Change cycle time.
!
! The key pad can also be used to enter commands. The special function
! Keys on the VT52 or VT100 correspond to the first 4 commands (3 on VT52).
!
! Typing ANY key will cause a display refresh.

        Include 'LABCHNDEF.FOR'

        Character*10 STATUS(4)
        Character*8 XTIME
        Character*9 XDATE
        Parameter COMMAND_MAX = 4
        Character*1 COMMAND,COMMAND_TABLE(COMMAND_MAX,2),ESCAPE,TERMINATOR
        Character*63 COMMAND_DEV

        External SS$_NOTRAN,SS$_NORMAL,SS$_PARTESCAPE
        External IO$M_CVTLOW,IO$M_NOECHO,IO$M_TIMED,IO$_READVBLK,IO$M_PURGE
```

```
        Logical SUCCESS,SYS$QIOW,SYS$ASSIGN
        Integer CHANNEL,DISPLAY_FLAG,OLD_DISPLAY,COMMAND_CHAN
        Integer DEF_TIME_OUT,TIME_OUT
        Byte    ERASE_SCREEN(2),HOME(2),ERASE_LINE(2),VT52_MODE(7)
        Integer*2 IO_STATUS(4),CHAR_COUNT
        Equivalence (ESCAPE,HOME),(CHAR_COUNT,IO_STATUS(2))

! VT52 control ESCAPE Sequences

        Data HOME,ERASE_SCREEN,ERASE_LINE
        1   /'33'O,'H','33'O,'J','33'O,'K'/

! VT100 control ESCAPE seguences
! This ESC seq places a VT100 in VT52 mode

        Data VT52_MODE/'33'O,'[','?','2','l','33'O,']'/

        Data STATUS/'Unknown ','Inactive',' Active ',' '/
        Data COMMAND_TABLE/'C','P','E','H','P','Q','S','R'/
        Data DISPLAY_FLAG,ERASE_FLAG /1,.TRUE./
        Data DEF_TIME_OUT /1/

! Map to the GLOBAL DATA section created by the I/O program

        Call LABIO_INIT(0)

! Place VT100's in VT52 mode

        Type 500, VT52_MODE

! Initialize Command input channel
! We will read the command via a QIOW with a 1 sec timeout
! Commands are single character, to simplify matters we will
! read with no echo and convert lower to upper case.


        Call SYS$ASSIGN( 'TT',COMMAND_CHAN,,)
        QIO_READ = %Loc(IO$M_NOECHO) + %Loc(IO$M_CVTLOW) + %Loc(IO$M_TIMED)
        1 + %Loc(IO$_READVBLK)
        TT_PURGE = %Loc(IO$M_PURGE)
        Go To 25                ! Display Something

! Get a command from the user, but only wait a short time (TIME_OUT)
! so we can update the screen. The input buffer is purged if a command
! was decode on the last read. (Prevents unnecessary erase loops)

20      DISPLAY_FLAG = OLD_DISPLAY !Default is last display
        TIME_OUT = DEF_TIME_OUT    !Default time out

21      TABLE_INDEX = 1            !Assume no escape sequence

22      Call SYS$QIOW(,%Val(COMMAND_CHAN),%Val(QIO_READ+PURGE),
        1 IO_STATUS,,,%Ref(COMMAND),%Val(1),%Val(TIME_OUT),,,)
        PURGE = 0
```

```
!
! If escape seq., set command table pointer to second table and
! get character following escape.
        TERMINATOR = Char( IO_STATUS(3) )
        If( TERMINATOR .ne. ESCAPE ) Go To 23
        TABLE_INDEX = 2
        Go To 22        !Get char following escape

23      If( CHAR_COUNT .ne. 0) Then     ! Char count not 0
! Check for char 1-9
          If( COMMAND .ge. '0' .and. COMMAND .le. '9' ) Then
            DEF_TIME_OUT = Ichar ( COMMAND )  - Ichar( '0' )
! Not 1-9 try a command.
          Else
            ERASE_FLAG = .true.         ! Screen erase
            Do 24 I = 1,COMMAND_MAX
            If( COMMAND .eq. COMMAND_TABLE(I,TABLE_INDEX)) DISPLAY_FLAG = I
24          Continue
          End If
          PURGE = TT_PURGE              !Purge the input buffer next time
        End If
!
! Get date and time, then dispatch to display routine
!
25      Call DATE (XDATE)
        Call TIME (XTIME)

        Go to (50,60,99,40) DISPLAY_FLAG
!
! Refresh the screen (Erase and Redisplay)
!
30      DISPLAY_FLAG = OLD_DISPLAY      !Redisplay last display
        ERASE_FLAG = .true.
        Go To 25
!
! Display the HELP frame, set the temporary time-out to 1 minute
!
40      Type 600, HOME,ERASE_SCREEN     !Display the help frame
        TIME_OUT = 60                   !Give the user 1 minute to read it
        DISPLAY_FLAG = OLD_DISPLAY      !When it times out, default old
        ERASE_FLAG = .true.
        Go To 21
!
! Generate the Status Line for each A/D channel
!
50      If ( ERASE_FLAG ) Type 300, HOME,ERASE_SCREEN
        Type 100, HOME,XTIME,XDATE
        CHANNEL_COUNT = 0
        Do 51 CHANNEL = 1,MAX_AD_CHANNEL
        If( AD_BLOCK(2,CHANNEL) .ne. 0 ) Then    !If allocated, display info
          Type 200,CHANNEL, STATUS(AD_BLOCK(1,CHANNEL)+1),
        1 (AD_BLOCK(J,CHANNEL), J = 2,6 )
          CHANNEL_COUNT = CHANNEL_COUNT + 1
        Else                                     !If not allocated, say so
          Type 900, CHANNEL,'<Unused>',ERASE_LINE
        End If
51      Continue
```

```
        PID_COUNT = 0
        Do 52 PID_INDEX = 1, MAX_PID
        PID = CONNECT_BLOCK(PID_INDEX,1)
        If ( PID .ne. 0 ) PID_COUNT = PID_COUNT + 1
52      Continue

        Type 400,ERASE_LINE, PID_COUNT,CHANNEL_COUNT
        OLD_DISPLAY = DISPLAY_FLAG
        ERASE_FLAG = .false.
        Go to 20

!
! Status display via process (PID)
!
60      If ( ERASE_FLAG ) Type 300, HOME,ERASE_SCREEN
        Type 100, HOME,XTIME,XDATE
        PID_COUNT = 0                   ! Number of connected processess
        CHANNEL_COUNT = 0               ! Number of allocated channels
        Do 61 PID_INDEX = 1, MAX_PID
        PID = CONNECT_BLOCK(PID_INDEX,1)
        If ( PID .ne. 0 ) Then
        PID_COUNT = PID_COUNT + 1
        OLD_COUNT = CHANNEL_COUNT
          Do 62 CHANNEL = 1, MAX_AD_CHANNEL
          If( AD_BLOCK( 2,CHANNEL) .eq. PID ) Then  !If right PID, display info
            Type 200, CHANNEL, STATUS(AD_BLOCK(1,CHANNEL)+1),
     1      (AD_BLOCK(J,CHANNEL), J = 2,6 )
            CHANNEL_COUNT = CHANNEL_COUNT + 1
          End If
62        Continue
        If (OLD_COUNT .eq. CHANNEL_COUNT ) Type 800, '<None>',PID,ERASE_LINE
        End If
61      Continue
        Type 400,ERASE_LINE,PID_COUNT,CHANNEL_COUNT,ERASE_SCREEN
        OLD_DISPLAY = DISPLAY_FLAG
        ERASE_FLAG = .false.
        Go to 20

!
! Exit
!
99      Call Exit

!
! Format Statments
!
100     Format(1X,2A1,'           Lab IO Status as of ',A,' ',A//
        1' Channel   Status       PID     Tics/Sample  Buffer Size
        1       Buffers  '/)

200     Format(I5,5x,A8,Z10,4I12)

300     Format(' ',4A1)

400     Format(' '2A1/' Totals: ',I2,' Processes connected   ',I2,' Channels
        1 allocated'/'                        <Type an H for help>'2A1$)
```

```
500     Format(' '7A1)

600     Format(' '4A1/
        1' The following commands are available:'//
        1'      VT100   VT52     any'/
        1'      ------  ----     ---'/
        1'       PF1    red       C    Channel Display'/
        1'       PF2    blue      P    Process Display'/
        1'       PF3    grey      H    Help Display'/
        1'       PF4     n/a      E    Exit'//
        1' To change display time, type a digit 0-9 for the desired time'//)
700     Format(A)

800     Format(' ',A6,11X,Z10,2A1)

900     Format(I5,5x,A8,2A1)

        End
![End of File]
```

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